# Exploring final year dental students' attitudes toward and understanding of reflection and reflective practice in the Conservative Dentistry Clinics at a South African dental school

by
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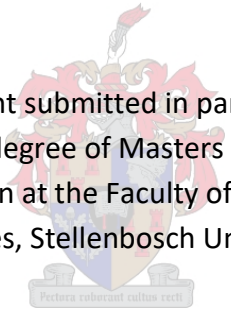

Research Assignment submitted in partial fulfilment of the requirements for the degree of Masters of Philosophy in Health Professions Education at the Faculty of Medicine and Health Sciences, Stellenbosch University

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## Declaration

I, the undersigned, hereby declare that the work contained in this assignment is my original work and that I have not previously submitted it, in its entirety or in part, at any university for obtaining any qualification.

(Colleen Carol Anne Cloete) Date: December 2020

## Dedication

This project is dedicated to the 2019 final year dental students at the University of the Western Cape, Faculty of Dentistry, in the hope that their input will inform teaching practices in the clinical setting across all departments within the Dental Faculty.

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# Table of Contents

**List of Tables**

# Exploring final year dental students' attitudes toward and understanding of reflection and reflective practice in the Conservative Dentistry Clinics at a South African dental school.


## Abstract

In the field of health professions education, it is well accepted that reflection and reflective practice have numerous benefits ranging from increasing self-awareness, to promoting learning and behaviour changes, to enabling self-empowerment and ultimately aiding in the development of professional competence. Reflection provides opportunities for students to explore experiences in the workplace and integrate existing knowledge with new understandings. Undertaking this process promotes deep personal and transformative learning, the overarching goal being to foster reflective practitioners who provide holistic patient care. The study was conducted at the University of the Western Cape (UWC), Faculty of Dentistry, where the purpose of the study was to explore students' attitudes towards reflection and reflective practice and what they understood about practicing reflection in the clinical environment. A phenomenological qualitative approach was used to examine the experiences of final year dental students and this method of inquiry allowed the researcher to gain an understanding of situations through the subjective experiences of the participants, and the meanings these participants attributed to the experiences. All final year dental students enrolled at the UWC, Faculty of Dentistry were eligible to be participants in the research project. Audiotaped individual interviews were conducted in a semi-structured, informant style interview format. Data were analysed applying an inductive approach and using the assignment of codes to organise the data into themes and sub-themes. The findings of this study indicate that students have an understanding of reflection and reflective practice and an idea of the value as it relates to Dentistry, however, their focus is solidly geared toward procedures and techniques with minimal mention of the benefit being related to improving patient care. This finding is aligned with the limited literature on reflection and reflective practice in dental education. Further highlighted in this study was the lack of guidance and support of reflective learning by a number of clinical teachers.

It is hoped that this study will better inform educational activities so that the clinical environment becomes a more meaningful learning platform. The facilitation of critical thinking and clinical reasoning will result in improved patient care which would be the ultimate outcome.

**Opsomming**

Op die gebied van gesondheidsberoepe onderwys, word dit aanvaar dat refleksie en reflektiewe praktyk talle voordele het wat wissel van toenemende self-bewustheid, die bevordering van leer en gedrags-veranderinge, selfbemagtiging en uiteindelik, die ontwikkeling van professionele bevoegdheid. Refleksie bied studente geleenthede om ervarings in die werkplek te verken en bestaande kennis met nuwe begrip te integreer. Hierdie proses bevorder diep persoonlike en transformerende leerpraktyke, waarvan die einddoel is om reflektiewe praktisyne op te lei wat holistiese pasiëntesorg kan verskaf. Die studie is aan die Universiteit van Wes-Kaapland (UWK), Fakulteit Tandheelkunde uitgevoer. Die doel daarvan was om studente se houdings teenoor refleksie en reflektiewe praktyk as ook hul begrip van die beoefening van refleksie in die kliniese omgewing te ondersoek. 'n Fenomenologiese kwalitatiewe benadering is gebruik om die ervarings van finalejaar tandheelkundige studente te ondersoek. Hierdie metode het die navorser in staat gestel om 'n begrip van situasies te verkry deur die subjektiewe ervarings van die deelnemers asook insig in die betekenisse wat hierdie deelnemers aan die ervarings toegeskryf het te ondersoek. Alle finalejaar tandheelkundige studente van UWK se Tandheelkunde Fakulteit kon aan die navorsingsprojek deelneem. Bandopnames van individuele semi-gestruktureerde onderhoude is gedoen. Data is deur 'n induktiewe benadering ontleed en kodes was toegeken om die data in temas en subtemas te organiseer. Die bevindings van hierdie studie dui daarop dat studente 'n begrip van refleksie en reflektiewe praktyk het, asook 'n idee van die waarde daarvan in die tandheelkunde konteks. Nietemin, was die fokus stewig gerig op prosedures en tegnieke met 'n minimale begrip van die voordele wat dit inhou in die verbetering van pasiëntesorg. Hierdie bevindings is in lyn met die beperkte literatuur oor refleksie en reflektiewe praktyk in die tandheelkundige onderwys. Die gebrek aan leiding en ondersteuning van reflektiewe leerpraktyke deur 'n aantal kliniese dosente ook uitgelig.

Daar word gehoop dat hierdie studie die opvoedkundige aktiwiteite wat in die kliniese omgewing gebeur sal kan inlig sodat dit 'n meer betekenisvolle leerplatform kan word. Die fasilitering van kritiese denke en kliniese redenasie sal hopelik ook lei tot verbeterde pasiëntsorg as die uiteindelike uitkoms.

## Chapter One: Introduction to the study

This chapter outlines the introduction and overview of the study. Included is the background, building towards the rationale for the study, research aim and objectives and concluding with a brief overview of the research methodology.

### 1.1 Introduction and background

Reflection and reflective practice are important in medical education and have been described, in the field of health professions education, as the process of thinking critically and consciously about one's practice in order to reduce the risk of non-conscious practice that may lead to compromised patient care (Chaffey et al., 2012). Particularly in the clinical context, reflective practice can be seen as contributing to the integration of theory and practice, making sense of actions, and solving problems (Tsang & Walsh, 2010). Developing reflective practitioners reportedly increases self-awareness, promotes learning and changes in behaviour, enabling self-empowerment, and ultimately professional competence (Asadoorian et al., 2011). However, there is a dearth of literature on dental curricula that include opportunities to build capacity to reflect on practice. Clinical teaching and learning in Dentistry has largely focussed on apprenticeship models in which emphasis is placed on teaching technical skills and systematic procedures. This technique-focussed approach does not optimise student learning (Tsang & Walsh, 2010). Within undergraduate dental curricula, reflective practice might potentially play a crucial role in maximizing the learning from learning opportunities. When students are engaged in the process of reflective practice, they are thinking about how their work meets set criteria, they analyse the effectiveness of their efforts, and plan for improvement (Jorwekar, 2017).

In 2004, the School of Dentistry of The University of Stellenbosch was incorporated into The Faculty of Dentistry at the University of the Western Cape (UWC). This amalgamation made the current dental faculty at UWC Africa's leading dental school (www.uwc.ac.za), responsible for training almost 50% of all new dentists in South Africa. Clinical training aims to be patient-centred with emphasis on maximum clinical exposure and early patient contact. Final year dental students at the faculty engage in four-hour Conservative Dentistry (Cons) clinical sessions twice weekly from January to November. During the sessions, the student provides patient care under the supervision and guidance of a clinical teacher. The environment forms a joint patient care and clinical learning platform. Clinical teachers have groups of five to six students during the four-hour session.

Conservative Dentistry (Cons) is the branch of dentistry concerned with the conservation of teeth. The scope of practice in these clinics is restoring the dentition of the patient to optimal

form, function and aesthetics. In keeping with accepted or conventional practice (Vermunt & Verloop, 1999; Gerzina et al., 2005), clinical teachers in the Cons clinics are required to monitor, guide, and provide feedback to students relating to their clinical performance and patient management during the clinical session. The student provides treatment, frequently within a limited timeframe, to a patient who is often anxious. The clinical teacher needs to ensure that firstly, the patient of each student assigned to him/her receives optimum treatment; secondly, each student engages meaningfully in the learning activity and lastly, the learning environment is safe and supportive of student learning. In the clinic, responsibility for negotiating learning activities is ideally shared between clinical teachers and students. Students are responsible for carrying out learning functions and clinical teachers have the task of motivating students to do so. These factors described above may contribute to a challenging learning space for both student and teacher.

My philosophy of teaching is to engage students so that they are active participants in their own learning, so during my time as a clinical teacher in the Cons clinics, when I attempted to engage students in conversation about their thoughts, feelings and actions before, during and after the clinical session, I was perplexed by the response of most of the students. Students preferred being instructed by the clinical teacher on treatment provision rather than participating in joint decision-making in the management of the patient. However, I aimed to promote and encourage students to reflect before, during and after their actions to make their learning experiences more meaningful. From students' comments related to my practice of encouraging reflection, I realised that there were a number of students who were uncomfortable with the process of reflection and others who enjoyed the interaction before, during and after the clinical encounter. This motivated me to conduct a more formal exploration into students' understandings of and attitudes toward reflection and reflective practice.

Although students are informally encouraged to reflect on their clinical experiences, no structured reflective activities are explicitly included in the curriculum. Taylor (2006) and Mann et al. (2009) argue that reflective practice is not a spontaneous activity but is believed to be teachable in an encouraging, safe environment and a skill requiring guidance and patience. The environment is important because, if it does not value and validate reflective practice as a learning strategy, reflection may not be adequately employed and the potential benefit may be lost. As a result, it is my estimation that dental students' reflective, critical thinking skills remain under-developed and under-utilised and their learning experiences translate to rote learning with mechanical routines; this is in line with Boyd's (2002) finding.

## 1.2 Rationale for the study

"*There can be no true growth by mere experience alone, but only by reflecting on experience*" (Dewey, 1929).

Mann et al. (2009) have reported that engaging in meaningful reflection and reflective practice enables students to increase their competence and clinical skills; this engagement helps make meaning of situations to promote learning. On the clinical platform, teachers should create opportunities for collaborative reflection by including students and inviting their contribution to patient treatment so demonstrating that reflection and reflective practice can be a shared as well as an individual experience. This collaborative reflection is important in preparing students for participation in inter-professional teams required by the profession after graduation (Clark, 2006). In the work by Jorwekar (2017) relating to the health professions, reflection and reflective practice have been shown to be vitally important to firstly, assist students think about how their work meets criteria set by the professional regulating body; secondly, help students analyse the effectiveness of their efforts; and lastly, develop a plan for improvement.

Transitioning from student to graduate healthcare provider requires an ability to self-reflect and evaluate one's efforts. For this reason, it is important for students to be familiar with reflection and reflective practice before entering the world of work (Smith & Pilling, 2007).

The proposed research is relevant to the advancement of knowledge in reflection and reflective practice in Dentistry. The research may contribute to students being more aware of who they are, the kind of practitioner they want to be and how to improve on practice. This would ultimately lead to improving patient care.

## 1.3 Problem statement

Students are expected to learn from experiences, but true learning can only happen if they reflect on their experiences to develop a new understanding (Dewey, 1929). Russell (2005) and Taylor (2006) argue that reflection and reflective practice are not natural states or spontaneous activities and require guidance and time. Reflection should be explicitly taught and modelled in a safe, respectful environment. Teachers often ask students to reflect on clinical experiences without discussing the qualities of good reflection; students may not intuitively know what clinical teachers mean by reflection and reflective practice.

Problems that I have observed within the Cons clinical environment are firstly, students may not take reflection seriously because they do not recognize its value for their learning; secondly, reflection is not intentionally guided; and lastly, clinical teachers who are key role

players in facilitating reflection, may not be aware of this responsibility and may not feel equipped to promote reflection and reflective practice. To my knowledge, UWC Dental faculty does not have documented professional guidelines that include reflection and reflective practice.

### 1.4 Aim & objectives

The aim of the study was to gain a deeper understanding of students' attitudes towards reflection and reflective practice. In line with this aim, the objective was to elicit how students understand reflection and reflective practice in the Cons clinical environment.

### 1.5 Research question

The research questions for this study were as follows:

- What do final year dental students understand by reflection and reflective practice?
- What are the attitudes of final year dental students toward reflection and reflective practice?

### 1.6 Research methodology overview

A phenomenological qualitative approach was selected for this study to examine the experiences of final year dental students. This method of inquiry allowed the researcher to gain an understanding of situations through the subjective experiences of the participants, and the meanings these participants attributed to the experiences (Bowers & Wilson, 2002; Ramani & Mann, 2016).

A semi-structured, informant style interview format was chosen for data generation. Ten audiotaped individual interviews were conducted after the proposal had received ethical approval. The interviews were transcribed, coded and analysed through a process of thematic analysis. Data was analysed primarily through an inductive approach using the six-phase method of thematic analysis by Braun & Clarke (2006).

### 1.7 Assignment outline

The subsequent chapters will present a detailed report of the study. Chapter Two presents the literature reviewed to support this study. A detailed description of the research methodology applied to this research study is provided in Chapter Three. Chapter Four presents the findings from the data. The discussion of the findings in relation to the literature is presented in Chapter Five, as well as recommendations. Chapter Six provides a conclusion to the study.

## Chapter Two: Literature review

This chapter presents a review of published literature related to reflection and reflective practice in the context of the health professions. The aim of the literature accessed and reviewed was to give an overview of the research concern and the areas most relevant to this research project.

The literature review will start by elaborating on the terms reflection and reflective practice, followed by a discussion on reflection as an essential component to learning, guidance and support required for reflection, the value of developing reflective healthcare practitioners, a further discussion on reflective practice in Dentistry and the impact that the learning environment has on reflection and reflective practice. The last section of the review will outline the link between reflection and feedback.

The key-words utilised to retrieve the literature were reflection, reflective practice, feedback, dentistry student, Conservative dentistry clinics.

### 2.1 Introduction

There is growing evidence that reflection and developing reflective practice plays a critical role in enhancing professional values, knowledge and skills of healthcare practitioners (Asadoorian et al., 2011; Dempsey et al., 2001). Being reflective assists healthcare practitioners identify how their knowledge links with their practice. It also helps to better understand thinking, learning, strengths, personal limitations and areas for improvement (Jonas-Dwyer et al., 2013). The ability to continuously reflect on practice in a systematic way is regarded as key to responsible professional practice (Fook, 2015).

In health professions education, reflection helps students make sense of new information and integrate it into their existing framework of understanding. This will allow students to make informed decisions about what to do next and how to develop their practice. Being able to respond to challenges and cope with uncertainty is a graduate attribute in many courses (Hyde, et al., 2018). While literature related to reflection and reflective practice in other health professions is abundant, for example, Nursing and Midwifery (Pierson, 1998; Duffy, 2009), Pharmacy (Droege, 2003; Tsingos et al., 2015), Medicine (Menard & Ratnapalan, 2013; Jorwekar, 2017), evidence supporting reflection and reflective learning in Dentistry is limited (Tsang & Walsh, 2010). Reflection is suggested as a powerful learning tool, but appears to remain underutilised and under- researched in Dentistry (Woodman et al., 2002; Ashley et al., 2006; Brondani, 2010). From the literature accessed and reviewed, there appears to be limited

published information available regarding reflection and reflective practice amongst dentistry students training in dental schools in South Africa.

## 2.2 Reflection and reflective practice

Literature on reflection and reflective practice in education dates back several decades, the pioneers being Dewey (1929 & 1933) who postulated that genuine learning develops through experience and reflection on that experience; then Schon (1983) described reflection-in-action and reflection-on-action as being key to professional development; followed by Kolb (1984) who treated reflection as an integral part of the learning cycle; and Mezirow (1991) who described four levels of reflection associated with transformative learning theory, namely, habitual action to thoughtful action, followed by reflection and finally, critical reflection in which reflection on experience leads to a new understanding and modification in behaviour.

The terms reflection and reflective practice are often used interchangeably in the literature, suggesting that they are similar concepts. Reflection has been described as a metacognitive process in which an individual connects with feelings that occur before, during and after events (McAlpine et al., 1999). The purpose would be to develop a greater awareness and understanding of the "self" and the situation so that any future encounters are informed from the previous ones (Wald, 2015). This is key to professional competency, supporting the process of professional identity formation (Wald & Reis, 2010). Nguyen et al. (2014) suggest that reflection is the process of engaging the "self" in attentive, critical and iterative interactions with one's thoughts and actions with the intention of changing them. Others suggest that reflection is a way in which professionals can close the perceived gap between formal theory (what is advocated) and actual practice (what is enacted) in an effort to improve both (Schon, 1983; Philip, 2006). Sandars (2009) refers to reflection as a process of "turning back" thoughts so that they are understood and analysed. Taylor (2006) also describes human reflection as a "throwing back" of thoughts through thinking, review and consideration so as to make sense of them and to make contextually appropriate changes if necessary.

Two main forms of reflection have been identified, namely reflection-on-action and reflection-in-action (Schon, 1983). Reflection-on-action is the "thinking back" on what we have done so to develop more effective ways to produce changes for future improvements. This after-the-event proactive reflection requires a time commitment (Donaghy & Morss, 2000). Reflection-in-action (or felt-knowing) is the ability to "think on your feet" and examine your own behaviours and that of others while in a situation (Chacko & Sreerenjini, 2012). Developing the skills of reflection-in-action is associated with the development of expert practice. This immediate reactive reflection is valuable in that it allows one to solve immediate challenges (Donaghy &

Morss, 2000). Thompson & Pascal (2012) refer to a third form of reflection, which takes into account the importance of planning or forethought, known as reflection-for-action. This form of reflection takes into consideration the planning and thinking ahead in order to make the most of the time available in a given situation.

Reflective practice appears to be difficult to define and various terms are used such as reflection, critical reflection and reflexivity (Mitchell, 2017). Kinsella (2009) refers to reflective practice as on-the-job performance resulting from using reflective process for daily decision-making and problem-solving. It entails a variety of practices designed to assist in making sense of experiences. Reflective practice is thus viewed as an action-oriented and purposeful process that encourages active learning by allowing experiences to be considered through thought, emotions, and action (Kuit et al., 2001; Asadoorian et al., 2011; Iqbal, et al., 2016). Re-playing, reviewing and reflecting on a situation allows one to identify areas of good performance as well as areas requiring improvement (Academy of Medical Royal Colleges, 2017). Hence, the goal of reflective practice is to assist with continual improvement on practice, i.e. personal learning and development. This self-development addresses how we think and feel about ourselves and situations in the present and past (Lawrence-Wilkes & Ashmore, 2014). Self-assessment (being able to assess one's performance) plays a key role in student learning and developing reflective practitioners (Quick, 2016). Reflection is therefore not merely a mental event, but is a practice or act (Schon, 1983; Hallett, 2002). Schon (1987) described the hallmarks of reflective professional practice as knowing-in-action, recognizing surprise, reflection-in-action, experimentation, and reflection-on-action. This can also be referred to as informed practice (Thompson & Pascal, 2012).

### 2.3 Reflection as an essential component of learning

There is literature that supports reflection as an essential component of the learning process where new knowledge can be integrated with previous knowledge (Boud et al., 1985; Kolb, 1984; Wium & du Plessis, 2016). The benefits of reflection on learning are: assisting students bridge the distance between thoughts and actions; allowing them to make more acceptable choices and take more appropriate actions which may result in better effectiveness; students develop a critical understanding of theoretical curricular content, skills, and increased understanding of "self" and others (Deogade & Naitam, 2016; Wium & du Plessis, 2016). For a student to make the connection between what they learn in the classroom and their future practices, the student will need to reflect on his/her activities.

Often, negative situations prompt reflection, however, positive experiences can and should also promote reflection. Reflecting on positive experiences encourages one to see what has

been done well and how to replicate it in future. It is important, however, not to only reflect on the positive experiences as this can cause one to overlook problems and can result in challenges in the future. Negative experiences are sometimes easier to learn from because we think about what can be changed to effect in a more favourable outcome. When reflecting on situations that cause unsettling feelings of doubt and frustration, this may result in a disruption in firmly held beliefs and a discovery of flaws in what was previously perceived to be correct. This disruption will lead to a change in behaviour (Hyde, et al., 2018; Lucas, et al., 2017).

Reflection forces us to be more honest and open with ourselves about our behaviour. We then re-examine the experience through this new awareness which will hopefully create a change in behaviour, thinking and practice. This reflective learning allows the possibility for personal and professional growth and development which are vital characteristics of developing competence in the health professions (Hyde, et al., 2018; Deogade & Naitam, 2016).

Reflective learning, however, does not happen spontaneously, especially in the case of the Net Generation (Sandars & Homer, 2008). The Net Generation are the student generation that have grown up in a world where technology forms an essential part of their lives. Austin & Farlinger (2016) have similar views and have reported that the task of teaching reflection and reflective practice may be more challenging with individuals from generation Y (born 1982-2005). Eckleberry-Hunt & Tucciarone (2011) describe this generation as those who seek the simplest solution to problems and are more comfortable searching for answers on social media than searching within themselves. They have been raised in a world dominated by technology and instant gratification (NAS, 2006).

Despite this, reflection is a skill, and for a skill to be mastered, it needs to be taught, developed by training and requires regular feedback and practice for it to be perfected (Driessen, et al., 2005; Aronson, et al., 2012; Austin & Farlinger, 2016). One requires knowledge of how to reflect, and time for reflection. Understood and practised, reflective processes potentially create a daily attentiveness amongst professionals that keeps them alert to what is happening around them. This increases the likelihood that professionals will be able to develop and maintain quality care in practice (Taylor, 2006).

Within health professions education, it has been recognised that if students are to become reflective, they need to practice reflecting on and learning from experiences throughout their curriculum (Westberg, 2001). The author argues that there is a risk that students may commit errors that may be harmful to patients if they simply rush from experience to experience

without reflecting on what they are doing or what they have done. Reflective learning allows students to critically consider experiences and feedback received in the learning environment (de Peralta et al., 2017). Developing reflection and reflective practice is important for healthcare professionals working in challenging healthcare systems with increasingly complex patients (Epstein, 2008). Frequent opportunities of reinforcing self-reflection during patient care will allow the consciously competent student (i.e. the student who knows how to perform the task but requires practice, conscious thought and hard work) to depend less on the clinical teacher and more on his/her own decision-making abilities (Ericsson, 2004). Being reflective may enable healthcare practitioners to advance from “knowing how” to provide care to “actually providing care” to their patients (Daley, 1999; O’Kelley Wetcome et al., 2010). In order to obtain clinical competencies required for health professions, Schon (1987) noted that an increase of knowledge, which is connected to reflections on actions, is needed and this knowledge becomes the model with which unfamiliar situations are compared.

### 2.4 Guidance and support

Integrating and applying the knowledge, skills and behaviours needed for clinical practice requires guidance, instruction and support on how to do so (Academy of Medical Royal Colleges, 2017). Guidance and supervision of reflection are factors which students find valuable to their learning (Mann, et al., 2009). Johns (2002), states that guided reflection is a mutually supportive relationship where the individual is challenged, enabled and supported in the process of self-inquiry. In a professional setting, reflection is deliberate, structured, and purposeful, has to do with learning, and is about change in behaviour. The potential of reflection may not be fully realised without the assistance and support of another person (Sandars, 2009). The process, however, can be difficult because it forces one to be honest and recognise not only one’s successes, but areas of improvement, i.e. it makes one take the responsibility for one’s learning and teaching (Donaghy & Morss, 2000).

In a systematic review conducted by Uygura et al. (2019), the findings were that many educators were using reflection without teaching students how to reflect. In many schools of dentistry, students are given little or no help in learning the skills that are vital to being reflective learners (Westberg, 2001). If educators want students to reflect on their learning, then this needs to be incorporated into the curriculum as this cannot be expected to happen naturally (Albanese, 2006). According to Westberg (2001), the willingness to undertake the process and to value it as a means to improvement and development is the basis of promoting reflection. If the purpose of reflection is unclear, then this important skill will most likely be undervalued.

Work done in the field of health professions education has found that reflection is enhanced through educators' facilitation, so it is important for facilitators to also value the process (Chaffey et al., 2012). Educators need to be facilitators of learning rather than didactic providers of information (Trede & Smith, 2012). These authors continue by stating that the teaching and learning of reflective practice comprises an intertwined relationship between students, their educators and the environment. Educators can provide the necessary supportive environment to enable the student to make sense of their experience (Sandars, 2009). Wright (1989, p. 172) expands on the concept of a supportive environment by focussing on the clinical teaching interaction, suggesting that it is "a meeting between two or more people who have a declared interest in examining a piece of work. The work is presented and they will together think about what is happening and why, what was done or said, and how it was handled, could it have been handled better or differently, and if so how?"

To develop reflective practice, students need to actively engage with their clinical teachers. Generation Y students want to have a close relationship with their educators and want to feel that they are cared for (Epstein & Howe, 2006). These students have a preference for educators who are approachable, supportive, excellent communicators and good motivators. Open communication between the clinical teacher and the student will possibly allow the student to feel comfortable discussing strengths and areas of growth clearly and honestly. This relationship is not dissimilar to the parenting role which this generation of students finds comforting as they have been heavily influenced by the input of their parents (Epstein & Howe, 2006; NAS, 2006; Eckleberry-Hunt & Tucciarone, 2011).

Establishing a positive working relationship between the clinical teacher and student is key to all aspects of training and everyday clinical practice (Academy of Medical Royal Colleges, 2017). The following constitutes a positive working relationship: mutual respect; supportive clinical supervision; allowing clinical independence within limits; and being accessible, approachable and engaged. Students who feel respected and listened to will more likely engage in a dialogue that helps them gain insights into developing their reflective skills. If students feel disempowered to engage in dialogue with their clinical teachers, opportunities for the development of autonomy may be missed (Trede & Smith, 2012). Students should be encouraged to not only reflect after experiences (reflection-on-action), but also during experiences (reflection-in-action) and before experiences (reflection-for-action).

Students' attitudes to reflection have been mixed, with some studies finding students to perceive reflection as helpful (Embo, et al., 2014; Tsingos-Lucas et al., 2016) while Pearson

& Heywood (2004) show that students see reflection as a burden that adds to their already high workload.

Tsang (2012) reported that students find it difficult to reflect when they perceive their experiences to be routine. Repetitive clinical experiences perceived as routine tend to impede critical reflection, leading to mechanistic and protocol-driven practices. Students should be offered clinical learning experiences that are impactful, so that students move from describing an event to reflection on the event and analysis of their reactions and actions. Feedback and reflection are basic teaching methods used in clinical settings. Students who are invited to critique their work before clinical teachers provide feedback make their own discoveries relating to their strengths and areas that need improvement (Westberg, 2001). Developing reflective skills empowers students to learn from their experiences and enhances their responsiveness to the environment within which they work (Oelofsen, 2012). Reflective learning and practice enhance a deeper approach to learning, improve students' clinical performance for the benefit of the patient, and ultimately result in patient-centred care (Hargreaves, 2016). A study conducted by Tsang (2012) concluded that students' reflective skills improved at varying rates and times suggesting that the development of critical reflection may be dependent on exposure to a number of challenging clinical experiences and the availability of guidance and feedback.

Relating to clinical teachers, Branch & Paranjape (2002) have suggested three keys to the successful use of reflection in clinical teaching: firstly, the teacher being a good role model embodying the enthusiasm for learning, having optimal skills and knowledge and emphasizing the importance of patient-centred care; secondly, gaining the trust of the learner by exhibiting clinical excellence and concern for students and patients; and finally having the skills to facilitate reflection.

Operationalizing reflection in the clinical setting is based on the interactions between the clinical teacher and the student (Mann et al., 2009). Due to the power relations between students and clinical teachers, it is the teachers' responsibility to take the lead to facilitate student reflection (Trede & Smith, 2012). By asking the right questions, a clinical teacher can guide the reflective process. The ability to ask these questions is an extremely valuable skill and appropriate questioning can prompt students to think critically, so improving their problem-solving and decision-making skills (Duffy, 2009). There should be a dialogue between the clinical teacher and student where reflection in-and on-action and self-assessment are encouraged (Orsini et al., 2017). These dialogues should not only focus on the individual's technical and scientific knowledge, but should include affective and experiential characteristics

with the intention being to explore the individual's thoughts, perspectives and feelings (Kumagai & Naidu, 2015).

However, in some clinical settings, reflection is done infrequently. A reason for this may be that clinical teachers and students become defensive when reflection reveals insights that challenge their perceptions of their competence and self-worth (Epstein, 2008). Another reason may be that clinical teachers are not skilled in facilitating reflection (Branch & Paranjape, 2002). There is literature that supports these claims (Muir, 2010; Sukhato et al., 2016). These authors state that many clinical teachers have insufficient understanding of the theory of reflection and feel ill-prepared for teaching reflective practice. When staff are equipped with the knowledge and skills relating to reflection, only then can they foster this among their students (Braine, 2009).

### 2.5 The workplace environment

The workplace provides students with authentic experiences and is the ideal place to encourage and develop reflective practice. Only when the workplace environment is open, flexible and displays atmospheres of mutual trust and respect will it allow productive reflection and personal growth (Quick, 2016). The workplace can however inhibit the process through its focus on productivity and efficiency and an educational focus on competency and summative assessment (Trede & Smith, 2012). The clinical learning environment must value and legitimize reflective practice as a learning strategy or else this important skill may not be adequately practised and the potential benefit will be lost (Taylor, 2006). For reflective practice to be worthwhile, it needs to be formally integrated into the clinical area so becoming part of the continuous reflection-in and -on action (Johns, 1993).

### 2.6 Reflection and feedback

Feedback, as defined by Ende (1983), is the information provided describing students' performance in an activity; this information is intended to guide future performance in that same or related activity. Constant and meaningful feedback in a supportive environment promotes active student engagement, with learning being the ultimate outcome (Taylor, et al., 2013). Feedback on performance can help a student advance from beginner to expert through the four stages of competence as depicted in Table 1.

**Table 1: Role of feedback in performance development**

| | Student | Role of feedback |
|---|---|---|
| 1.Unconscious incompetence | Unaware of weaknesses | Assists in recognizing weaknesses |
| 2.Conscious incompetence | Aware of weaknesses, but lacks skills to improve | Assists in defining and refining skills |
| 3.Conscious competence | Demonstrates competence, but not fully integrated | Assists in the further refining of skills |
| 4.Unconscious competence | Carries out tasks without conscious thoughts | Builds on strengths and identifies weaknesses |

Feedback allows students the opportunity to compare their current performance to the target performance (Boud & Molloy, 2013). This will enable students to develop critical analytic skills and learn how to self-assess, key qualities required for independent dental practitioners. In health professions education, feedback provides the basis for clarifying goals, correcting mistakes and reinforcing good practices (Ahmed, 2018). Feedback is, however, an active collaboration between the student and clinical teacher. This collaboration, through active communication, enables understanding and shared decision-making (Johnson, et al., 2016).

Clinical teachers providing feedback can confirm that learning has taken place only when the student acts to bring about a desired change in behaviour, thus completing the feedback loop (Qureshi, 2017). Feedback on performance can be used as a conduit for reflection (Quinton & Smallbone, 2010). Desired change in behaviour can only be effected if the student develops the capacity to self-reflect on his/her practice and how it might be improved. Feedback is only beneficial if the student takes it seriously and reflects further to make sense of the learning opportunity, thinking specifically on how future clinical encounters could be improved (Harden & Laidlaw, 2013).

There are a number of feedback models that have reflection as a key component, such as Pendleton's rule (which helps to develop self-reflection and insight), Student/trainee-centred model (in which the feedback recipient should be receptive, reflective and responsive) and the ALOBA (agenda-led, outcome-based analysis) approach (where self-assessment is encouraged). Pendleton's rules is more conversation-based and learner-centred where the learner is requested to highlight the positives of the encounter first. This creates a safe environment in which the facilitator reinforces these positives and requests that the learner suggests what could be improved, offering opportunities for reflection (Hardavella, et al.,

2017). In the Student/trainee-centred model, the learner needs to be receptive to receiving feedback, reflective and responsive to the feedback received, so taking responsibility for the entire process (Qureshi, 2017). With the ALOBA approach, the principle is to identify what the learner requires assistance with and then the conversation is directed towards achieving the learner's goal by encouraging self-assessment. This model acts to empower the learner and reflection is an integral part of the process (Chowdhury & Kalu, 2004).

Clinical teachers are encouraged to provide immediate, specific, clear, behaviour-based feedback. Reflection combined with supportive and constructive feedback is required for the professional development of trainees (Academy of Medical Royal Colleges, 2017). The reasons cited are: encouraging students to reflect will make them use feedback correctly; reflecting on feedback can lead to informed self-assessment, followed by critical self-assessment that eventually results in increased performance (Dent, et al., 2017).

Clinical teachers are responsible for creating a supportive environment in which reflection and feedback can regularly be carried out. Students require feedback in an honest and supportive manner with the intention being to assist them in developing and improving their skills (Academy of Medical Royal Colleges, 2017). Students should be encouraged to reflect on the clinical encounter before they receive feedback as this helps the student to clarify the encounter in his/her own mind and lead the reflective dialogue with the clinical teacher.

However, providing feedback especially when corrective, is not always straightforward because it has a potential impact on the sense of self and capability of the recipient (Sargent et al., 2007). Providing feedback is challenging for clinical teachers because the clinical teacher must acknowledge the psychosocial needs of the student while ensuring that feedback is both honest and accurate (Molloy, 2009).

Academy of Medical Royal Colleges (2017) have made recommendations relating to reflection and feedback, namely: 1) reflection and feedback should be integral to all aspects of healthcare, 2) reflection and feedback should compare current against previous performance, 3) reflection and feedback should occur immediately after an event to maximise the benefits, and 4) reflection and feedback should occur after every clinical encounter.

### 2.7 Barriers to encouraging reflective practice

According to Philip (2006) and Trede & Smith (2012), there are barriers in higher education to encouraging reflective practice. These include: students with an assessment-driven outlook that lends itself to the students only wanting to be graded for their work, with little to no

reflection and feedback wanted; some students may see reflective practice as unimportant and are not comfortable with it; workplace culture and the demanding work environment; and clinical teachers who do not understand reflective practice. Some students believe that learning techniques are of the greatest importance, and therefore will not attempt to reflect or learn from the experience (Powell, 1989). Philip (2006) argues that these barriers need to be overcome to assist students gain the most from their academic learning.

## 2.8 Conclusion

In spite of the agreement that reflection is an important quality for dental professionals, there is a lack of guidelines to assist students and clinical teachers in developing their ability to reflect (Mann et al., 2009; Koole et al., 2011) and a lack of taught reflective learning in oral health and dentistry programmes (Moriarty & McKinlay, 2008).

Dental professionals work in challenging environments in which they are providing diverse patient care to patients who are becoming more demanding. Many scenarios that dentists encounter do not have straight forward ways to address them, but require critical analysis and interpretation (Teply et al., 2016). Practising as a reflective practitioner is a way to develop as a professional dealing successfully with such scenarios. As a result, dental education should assist students to become reflective practitioners and should not only be limited to the mastering of knowledge and clinical skills (Cowpe et al., 2009; Frenk et al., 2010). Teaching reflection needs to be planned and integrated into the curriculum as there are countless opportunities to engage with reflection throughout the course of study.

## Chapter Three: Methodology

This chapter describes the research methodology framing this study in line with the aim of better understanding final year dental students' attitudes toward and understanding of reflection and reflective practice in the Cons clinical environment. The design, participants, process of data generation and analysis, and ethical considerations pertaining to this study are presented in the chapter.

### 3.1 Research design

The theoretical perspective informing the methodology of this study is located within the Constructivist/Interpretivist research paradigm (Kivunja & Kuyini, 2017). In this context, social interactions between people and their environment are seen as key to augmenting existing knowledge on a particular topic of interest (Creswell, 2014).The point of departure for the researcher is the participants' experiences, opinions and behaviours and the emphasis is on understanding the participants' perspectives. The reality is subjective and the meanings will be varied and multiple. The interpretations and any contribution to existing theory that will be generated are grounded in the participants' experiences (Sullivan & Sargeant, 2011; Watling & Lingard, 2012).

A phenomenological qualitative approach was selected to examine the experiences of final year dental students. This method of inquiry enabled the researcher to gain an understanding of situations through the subjective experiences of participants, and the meanings these participants attributed to the experiences (Bowers & Wilson, 2002; Ramani & Mann, 2016).

### 3.2 Study setting

The Dentistry programme at UWC Dental Faculty is a five-year degree programme leading to registration as a dentist. At UWC Dental Faculty, approximately 80 students register for the five-year degree programme in dentistry. Enrolled final year dental students were the participants in the research study.

Both theoretical and clinical components are included in the dentistry programme. The practicum component of the programme includes clinical procedures and demonstrations in conjunction with case presentations in the clinical area. In Cons, students typically enter the clinical area in the middle of their third year of study, when they commence treatment on patients. These clinical sessions continue until the end of the fifth (and final) year.

The Cons clinics at the dental faculty were used as the research sites after permission was granted by the Human Research Ethics Committee, Faculty of Health Sciences, University of

Stellenbosch (**HREC Reference #:** S19/02/041)- Addendum A, and the Biomedical Research Ethics Committee, University of the Western Cape (**BMREC Reference #:** UWCRP160519CCAC)- Addendum B.

### 3.3 Population and sampling

The study population consisted of the final year dental students who were enrolled at UWC. The total number enrolled was 76. The study followed convenience sampling based on the ease of access to potential participants who would be most likely to have the necessary information needed to answer the research questions.

#### 3.3.1 Recruitment of participants

The class representatives were consulted, in order to establish which day and time would be most convenient to address the class. The participants were informed about the purpose and potential contribution of the study in class and via a letter. As the language of instruction at UWC is English, the information sheet and consent forms were constructed in English. The letter requested their consent to participate and participants were assured of confidentiality- Addendum C. On the day, I verbally explained the purpose of the research study to the class, as detailed in the information sheet- Addendum C. The potential benefits were outlined at the information session.

The findings of the study would hopefully provide knowledge and insight relating to the benefits of being a reflective practitioner and how these could facilitate improvement in clinical performance, with the ultimate result being patient-centred care. This supports the ethical principle of beneficence. Voluntary participation and confidentiality was emphasized. Voluntary participation ensured that respondents were not coerced and had exercised their right to choose in compliance with the principle of autonomy. Participants were informed that I, the researcher, would be the person who would have access to the electronic data and although my supervisor would also have access, it would be anonymous. During the information session, students had an opportunity to pose questions for clarity. The informed consent forms were left with the class representatives at the end of the information session. Students were given a week to consider the invitation to participate so limiting the extent to which students may have felt coerced into participating as a result of my presence. There were 20 responses and respondents were purposively sampled to ensure a diverse group. Respondents were plotted into a grid according to demographic details of age, race and sex and selected in such a way that the sample was roughly representative of the demographics of the entire class (Table 2).

Successful respondents (n=10) were emailed to notify them of their inclusion in the study and to make arrangements for the interviews. Participants were informed of their right to decline involvement and withdraw without any form of penalty. The principle to inflict no harm was adhered to through the process of voluntary participation and withdrawal. Participants were assured that if they withdrew from the study, the data collected to the point of withdrawal would be excluded and destroyed.

**Table 2: Demographic characteristics of the participants**

| Participant number | Age (years) | Race | Sex |
|---|---|---|---|
| P1 | 23 | Indian | F |
| P2 | 25 | African | F |
| P3 | 24 | White | F |
| P4 | 23 | Coloured | M |
| P5 | 27 | Coloured | M |
| P6 | 23 | White | F |
| P7 | 27 | African | M |
| P8 | 24 | African | M |
| P9 | 23 | White | F |
| P10 | 26 | African | M |

### 3.4 Data generation procedure

The consent form- Addendum C had to be signed by the participant, researcher and a witness prior to the participation in the study. After making a copy of the informed consent forms for my own records, the original was given back to each student who participated.

Individual face-to-face interviews were arranged at a convenient time for the participants. This type of interview was chosen to allow for the observation of verbal as well as nonverbal communication. When the researcher and participant are in the same room and have access to more than verbal data, they can build a rapport that may allow participants to speak more freely to disclose their experiences (Knox & Burkard, 2009).

A semi-structured, informant style interview format was chosen for data generation because this interview format allowed key questions that helped define the areas to be explored- Addendum D, however, there was an opportunity to change the words but not the meaning of

questions to help participants understand them. Probing for further responses enabled participants to understand questions better (Muir, 2010). This format also allowed the interviewer and/or interviewee to diverge in order to expand on an idea or response in more detail (Gill et al., 2008; Steinert, 2012).

Before the start of the interview it was explained to all participants that there was no correct answers to the questions; I wished to gain an understanding of their experiences. I began each interview by confirming participants' permission that the session could be audiotaped and names would be kept confidential. Ten audiotaped individual interviews were conducted. Participants were acknowledged and thanked for their contribution towards the research study. Refreshments were provided for all participants after the interview as a gesture of appreciation.

### 3.4.1 Data management and analysis

Participants' information and responses were stored electronically in a password-protected document file on my personal computer. Paper-based documents were stored in a locked filing cabinet housed within my office to which I would have sole access. Identities were protected in data analysis and reporting of the findings; a participant number was allocated for purposes of reporting. Audio recordings were retained under password-protected files. Participants were informed of the confidential handling of the data. Data of those who participated in the study would be kept for a period of five years.

Data generation and analysis occurred concurrently in an iterative cycle. I analysed data while collecting data to ensure that codes and categories appeared repeatedly and no new information emerged. It was not possible to know in advance how many participants would be required, but what was important was the sufficiency of data to fully inform all elements of the phenomenon being studied. There is no way of knowing whether anything new would have arisen if I had continued. In qualitative research design, the focus is on whether the researcher has collected sufficient data to confirm emerging themes. A decision was made to end data collection when no new insights emerged (Hanson et al., 2011).

The audiotaped interviews were transcribed (transcriptions were given to participants to review for accuracy), coded and analysed. Data was analysed primarily through an inductive approach, in which themes and sub-themes developed through my interpretations from engaging with the data. As this process was new to me, the six-phase method of thematic analysis by Braun & Clarke (2006) was followed (Table 3).

To familiarise myself with the data, I spent a considerable time reading and re-reading the transcripts to search for meanings and patterns and noted down ideas about what was interesting (initial coding). During this time, the transcripts were checked against the audio recordings to confirm accuracy. Thereafter, the initial ideas noted were then organised into codes. The coding was done manually. Codes were matched up with data extracts that demonstrated that code. Once all the data was coded and collated, the different codes were sorted into themes.

Following this, the main themes were reviewed and refined so that there were clear distinctions between themes. This involved reading all the collated extracts for each theme ensuring that they formed a coherent pattern. When it was found not to be coherent, the theme was reviewed and reworked. Hereafter, the validity of individual themes was considered in relation to the data set as a whole. The themes are meant to capture the meaning of experiences from the perspective of the participant as well as the researcher's interpretations. When this was indeed the case, I moved on to defining and naming the themes. Each theme needed to be clearly defined in a few sentences and if I was unable to do so, I continued refining the theme. Names were finally considered and assigned to each theme. The final phase was reporting on the analysis in such a manner that it provided an interesting, concise account of the story that the data communicated.

At this point it is important to recognize that researchers working alone with data need to acknowledge how this can influence the data analysis and generation of theories (Watling & Lingard, 2012). For this reason, it was essential to have another person (my research supervisor) independently examine the same data and guide the thematic analysis process. This mitigated bias and increased trustworthiness.

**Table 3: Phases of thematic analysis (Braun & Clarke, 2006)**

| Phase | Description of the process |
|---|---|
| 1. Familiarising yourself with your data: | Transcribing data, reading and re-reading the data, noting down initial ideas. |
| 2. Generating initial codes: | Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code. |
| 3. Searching for themes: | Collating codes into potential themes, gathering all data relevant to each potential theme. |

| | |
|---|---|
| 4. Reviewing themes: | Checking the themes work in relation to the coded extracts and the entire data set, generating a thematic “map” of the analysis. |
| 5. Defining and naming themes: | Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme. |
| 6. Producing the report: | The final opportunity for analysis, Selection of vivid, compelling extract examples, final analysis of selected extracts, relating the analysis back to the research question and literature, producing a scholarly report of the analysis. |

### 3.5 Ethical considerations

The approval to conduct the research study was obtained from the Human Research Ethics Committee, Faculty of Health Sciences, University of Stellenbosch; **HREC Reference #:** S19/02/041- Addendum A. Permission to gain access to the research site (UWC, Faculty of Dentistry) and the study population was obtained from the Biomedical Research Ethics Committee, University of the Western Cape; **BMREC Reference #:** UWCRP160519CCAC- Addendum B. Data generation commenced after ethical approval. Ethical considerations ensuring participant protection during the study have been discussed in the Methodology section.

This research project has no direct financial gain for the researcher and was a module assignment towards the completing of an MPhil degree in Health Professions Education at Stellenbosch University. Completion of the degree may, however, lead indirectly to benefits such as promotion with enhanced compensation.

### 3.6 Ensuring research quality

To ensure research quality, I considered the four quality criteria applicable to qualitative research, namely, credibility (trustworthiness), transferability (applicable to different settings), dependability (consistent) and confirmability (neutral or unbiased) (Frambach, et al., 2013).

#### 3.6.1 Credibility

Credibility refers to how believable and trustworthy the findings of the study are to others. For this study, credibility was enhanced through member checking which involved transcriptions

of the audiotaped interviews being emailed to the participants to review for accuracy. Triangulation or prolonged data collection were not applicable to this study due to the small-scale nature of the study and time constraints.

### 3.6.2 Transferability

Transferability refers to how applicable the study findings are to multiple or different settings. To enhance the transferability of this study, I provided clear information on the context of the study as I was personally involved in the clinical teaching of some of the participants in the Cons clinics at the time of the study. In addition, a detailed report on the Methodology was provided in this study.

### 3.6.3 Dependability

Dependability relates to the degree to which the findings of the study are consistent with the context in which the data set was collected. Dependability of this study was enhanced through saturation, i.e. I simultaneously analysed and collected data to ensure that codes and categories appeared repeatedly and no new information emerged. Dependability was further strengthened through an iterative process of data analysis.

### 3.6.4 Confirmability

Confirmability is the extent to which the study's findings are based on the study's participants and the context in which the data was generated, and not as a result of biases of the researcher. Confirmability of this study was strengthened through guidance from my research supervisor who independently examined the same data and guided the thematic analysis process. I had to acknowledge that I potentially brought my own bias to the analytic process and it was for this reason I had to exercise reflexivity so that the participants' experiences were fully understood without being influenced by my own beliefs and opinions (Bowers & Wilson, 2002; Ramani & Mann, 2016). Further enhancement of confirmability was through keeping a detailed record of all processes and decisions taken in this study.

## 3.7 My role as the researcher

As the researcher for this study, my position at the Dental Faculty is that of clinical teacher in the Cons department for students from third to final year. My time is spent on clinical teaching and training with dental students in the clinical setting.

In the research approach, knowledge construction resulted from interactions between myself and the participants, with the result that experiences and biases of both parties are expected to influence data generation to some extent (Tavakol & Sandars, 2014b). As the researcher, I

had to acknowledge that I potentially brought my own bias to the analytic process. It was my responsibility as the researcher to suspend beliefs and tolerate opinions that may have conflicted with my own through exercising reflexivity so that the perceptions experienced by participants were fully understood (Bowers & Wilson, 2002; Ramani & Mann, 2016).

I chose to use my knowledge as an insider to maximum benefit rather than getting an outsider. The benefits of being an insider researcher included having credibility and rapport (as I am known to the participants), access was easier and less time-consuming, and insiders understand the context well and are familiar with organizational cultures. Limitations to being an insider researcher are that students might not share certain information for fear of being judged, and insiders might assume that their perspective is more widespread than it actually is (Mercer, 2007).

## Chapter Four: Findings

This chapter offers the findings from the semi-structured interviews conducted in this study. A phenomenological qualitative approach was used to explore the experiences, relating to reflection and reflective practice, of the final year dental students in the Cons clinics at UWC Dental Faculty. This method of inquiry allowed me to gain an understanding of situations and events through the personal experiences of the study participants and the meanings they attributed to these experiences (Bowers & Wilson, 2002; Ramani & Mann, 2016).

### 4.1 Introduction

Themes with sub-themes were developed through my interpretation of the data set. Concept maps for each theme have been included (Addendum E), as a way of illustrating my interpretation and summary of the qualitative data set.

A detailed description of this inductive data analysis process can be found in the Methodology (3.4.3.4.1). Direct quotations (exemplars) from the data are provided to elaborate on the themes and sub-themes showing how the findings were grounded in the participants' experiences. The reporting of the findings detailed below is in a manner that provides an account of the story that the data communicated. The participant quotation is denoted by the letter 'P' followed by the designated number assigned to the participant. These findings are represented in Table 4.

**Table 4: Themes and sub-themes developed from the data set**

| Main themes | Sub-themes | Codes |
|---|---|---|
| **1. Understanding reflection and reflective practice** | | • Time out to think<br>• Looking back<br>• Evaluate<br>• Improve<br>• Intentional<br>• Respond to change<br>• Implement change<br>• Learn |
| **2. Experiencing the reflective process** | • Lack of explicit teaching of reflection and reflective practice<br>• Requirement of being expected to reflect | • Have not learnt about reflection<br>• Not sure how to do it<br>• Difficult<br>• Challenging |

| | | |
|---|---|---|
| | • Challenges relating to the process of reflection | • Awkward<br>• Unfamiliar<br>• Not a regular thing<br>• Not direct<br>• Personal |
| **3. Workplace-based teaching, learning and development of reflection and reflective practice** | • Interaction between participants and clinical teachers in the clinical context<br>• Feedback and reflection | • Supervisor-specific<br>• Limited interaction<br>• Rare discussion<br>• Provide information<br>• Relationship<br>• Environment |
| **4. Value of reflection and reflective practice in Dentistry** | | • Know how and why<br>• Direction<br>• Learn<br>• Improve skills<br>• Self-assess<br>• Analyse |

### 4.2 Theme 1: Understanding reflection and reflective practice

Theme 1 described the students' definition and understanding of reflection and reflective practice. Participants offered a number of definitions, but appeared to use the terms interchangeably. The exemplars mainly illustrated reflection-on-action where participants tended toward taking a retrospective view of learning experiences as compared to reflection-for-action (planning and forethought) and reflection-in-action (thinking while in a situation allowing one to solve immediate challenges).

> *"….basically looking back on what you've done or any situation and then being able to make any sort of conclusion."* (P1)

> *"….to take some time out and to sit and think about a particular situation and your experience. What it was like, what you could have done better, and what you did well."* (P2)

> *"….basically, you have to give your own criticism so you'll be able to evaluate something you've done when you see it."* (P4)

*"….you go back and you go through steps and how you could have done something better, where you can improve."* (P8)

Students expressed the goal of reflective practice as a continual improvement on practice by identifying what went well and what required improvement. The exemplars below demonstrated that the participants were motivated to develop their skills. This could be interpreted as self-evaluation and monitoring for future practice, which was considered by the participants to be an important benefit.

*"….if I were to think of reflective practice, say I've done a root canal treatment and reflect on what I've done, I'd think is that the best way I could have done that or is there other ways I could've done that, and then thinking what can I do in future to improve on what I've done."* (P3)

*"….if you've done the same thing numerous times you basically assess it over and over to see if you're getting an improvement of it or if it's getting better or worse."* (P4)

*"….now you are learning on your work, the work that you did, you are trying to learn and improve from that work."* (P10)

One student provided a more complex understanding of reflective practice when describing it in terms of being a purposeful, action-oriented process.

*"….I think it's being intentional about changing where you are wrong and implementing that in the following situation that you come across that is sort of the same."* (P6)

The exemplars indicated that students had a general understanding of the concepts of reflection (as looking back) and reflective practice (as looking forward to improving on practice).

### 4.3 Theme 2: Experiencing the reflective process

Theme 2 was developed by exploring the participants' experiences with reflection and reflective practice at the dental faculty and within the Cons clinics. The sub-themes within this theme are discussed below.

### 4.3.1 Sub-theme 1: Lack of explicit teaching of reflection and reflective practice

Of particular significance from the data set was the finding that participants had received no formal training or education in reflection. Participants described how the concepts were not explicitly taught.

> *"….not under the headings of this is how to reflect or this is reflective practice."* (P1)

> *"….honestly, if I've been told about reflection, it was from a lecturer here, a lecturer there. But it wasn't in class. I haven't really learnt what reflection is."* (P2)

> *"….also weren't taught how to do it [reflection]. So didn't know am I doing it right or anything, and it was quite difficult."* (P3)

Interestingly, students recalled informal explanations of the concepts and engaging in reflection without any formal teaching on the process. This resulted in some students experiencing feelings of dissonance- students felt conflicted as they were uncertain as to whether they were correctly practising reflection.

### 4.3.2 Sub-theme 2: Requirement of being expected to reflect

Participants experienced some clinical teachers expecting them to engage in reflection without having been explicitly taught how to reflect. There was an assumption that students fully understood the concept of reflection and were sufficiently competent at the skill.

> *"….it felt a bit awkward because I wasn't used to it."* (P2)

> *"….we were just told to do the reflective essay. It was like 3 pages long. We had objectives and questions and we had to reflect on that."* (P3)

> *"….certain supervisors[1] prompt reflective assessment of something you've done."* (P4)

> *"….we have never had that [reflection] taught to us. When I was writing the reflection based on the train[2] experience I did actually find that challenging."* (P5)

[1]Supervisors: dental students refer to the clinical teacher (a qualified dentist employed at UWC Dental Faculty to offer clinical teaching, training and supervision to undergraduate dental students on the clinical platform) as a supervisor.

[2]Train: the final year dental students are required to do a two week rotation on the Phelophepa Healthcare Train that travels to areas of rural South Africa providing healthcare to resource-constrained communities

*"…. [reflection] is not a regular thing. It's a bit off putting because you're not really sure. It caught me off guard because I didn't know supervisors actually go into that."* (P4)

*"….I don't think it was very direct about reflective practice or anything about reflection. But generally in the clinics a couple of supervisors do ask me to go through what I've learnt, what I've thought of certain procedures that I've done in that session and also to evaluate myself where I think I did well or didn't do so well."* (P8)

Again, as conveyed through the exemplars, there were feelings of dissonance where students' ability to apply their knowledge on reflection was lacking. In this instance, there was limited prior knowledge on the concepts of reflection and reflective practice. The process was regarded as not particularly straightforward by some, possibly making the experience less pleasurable and causing students to avoid future reflective opportunities. This would certainly have had an impact on students' overall attitudes toward the reflective process.

### 4.3.3 Sub-theme 3: Challenges relating to the process of reflection

Participants expressed that the process of reflection in clinical practice was challenging. There was a reluctance to verbalise what they were thinking.

*"….So I think that's also why we sometimes would not say anything when someone asks us to reflect because we know we're feeling it from a personal point of view."* (P1)

*"….it makes one feel a little uncomfortable having to reflect on what you did and your experience in the clinic."* (P5)

Inferences that could be drawn from these exemplars were that students found the process challenging because it forced them to be honest about their practice and behaviour. This could possibly have resulted in unsettling feelings because it identified flaws in what students previously thought to be correct. The challenges could also have been caused by limited prior knowledge of how to go about the process of reflection and the inconsistency in the clinics of reflective learning.

## 4.4 Theme 3: Workplace-based teaching, learning and development of reflection and reflective practice

Theme 3 pertained to participants' experiences of teaching and learning in the workplace and the development of reflection and reflective practice in the clinical context. The sub-themes within this theme are discussed below.

### 4.4.1 Sub-theme 1: Interaction between participants and clinical teachers in the clinical context

The data suggested that discussion and interaction within the clinical environment between the clinical teacher and participants was often supervisor-specific.

> *"….very few of them [supervisors] actually ask so what did you deserve for that session, what do you think you could have done better."* (P2)

> *"….normally, the supervisor and I will speak about the session, the procedures that were done, if there were any difficulties that I encountered during the session."* (P7)

> *"….okay, it does range with specific individuals, with specific supervisors, but generally it is quite relaxed going through the procedures that we've done and going through what my mark should be."* (P8)

The exemplars below provide evidence that the interaction between the stakeholders in the workplace was inconsistent and on some occasions, non-existent.

> *"….very rarely do you get a supervisor that will discuss anything, unless it is something very different then they would have a discussion."* (P1)

> *"….some supervisors just check and leave but some of them don't even check, they just stand from afar and will look and say okay, just go ahead…."* (P5)

> *"….There is no discussion….unless it is something that you don't come across quite often then they [supervisors] might say okay, look out for this or be wary of this or that. But nothing more, it is usually just go ahead."* (P6)

Clearly highlighted in the data set was that much of the interaction at the end of the clinical session was limited to feedback for assessment purposes.

> *"….they [supervisors] don't really ask how you felt about the session, they just give you a mark. Then there were instances where I had one or two supervisors who would say okay, what would you give yourself if you were assessing yourself in this session?"* (P4)

> *"….and with some supervisors there is no real interaction…. they won't really speak about it…. clinical mark is not really discussed with me."* (P5)

The data set provided evidence that there was more provision of information by the clinical teacher rather than facilitation of reflective learning.

> *"….usually the supervisor would say okay, maybe you can just improve on that and then I say okay, yes I see, then they wouldn't have to explain why."* (P1)

> *"….then the supervisor came in and told me you can restore the tooth. As I was doing the cavity prep it started bleeding because the lesion was deep, so then I thought it's going to be a root canal…..Then the supervisor came and he assessed it and said no, just put a layer of calcium hydroxide over it. I did not understand why"* (P4)

In the above exemplar, there appeared to be no real discussion with the participant during the clinical procedure, merely an instructional method of teaching which has a more teacher-centred approach, rather than a student-centred teaching approach. Student-centred teaching allows students to co-create knowledge as opposed to passively receiving information from the teacher. This promotes a deeper, more meaningful learning experience.

Participants described how positive qualities of clinical teachers enabled learning in the workplace. Learning was facilitated when the clinical teacher was attentive, approachable and available.

> *"….and also I had better supervisors…a supervisor who is approachable, actually willing to teach me."* (P2)

> *"….I actually appreciate those supervisors that come in and ask if you're still okay….we get so used to the supervisors just sitting at the table drinking coffee…."* (P3)

> *"….It [interaction] actually helps me because then I actually get to learn where I'm going wrong and where I'm right and it actually just reassures that okay, I know what I'm doing. And also, it does take a bit of time when you're pressed for time, but at the end of the day, I feel that it is needed."* (P5)

Learning was facilitated when there was an amicable relationship between the clinical teacher and participant.

> *"….I found that a clinical teacher makes the biggest difference ever…..if it's just not comfortable then the thing is you would disagree with something and feel too uncomfortable*

*to say what you feel and then just kind of carry on with what the clinical teacher says, but you don't necessarily agree."* (P6)

*"….if you are relaxed with your supervisor and interact, you learn. You can even ask questions if you're feeling relaxed, then it's when you gain a lot of confidence."* (P10)

*"….like with some supervisors you discuss, you feel like yes I'm learning something, you see yourself developing. But others, they are not like that, they will just come and check."* (P10)

The interaction between the clinical teacher and the student during the clinical session was reported to put the patient at ease. This assisted with the patient's confidence in the participant's ability to provide care, possibly because the patient knew that the clinical teacher would be attentive and close by to provide guidance and support.

*"….I think it makes the patient feel like you've done something good, so they want to come back and they want to be treated by you. So I prefer that [interaction] because it's for the patient."* (P1)

*"….because it also puts the patient at ease in a way because they [patients] know that this will be a supervisor that will be checking in and will be looking after the patient and student."* (P5)

Learning by engaging in collaborative reflection was alluded to through communities of practice. Communities of practice and collaborative learning are important as a professional learning strategy particularly when preparing students for professional engagement post-graduation.

*"….the nice thing is that most of the supervisors are always interacting with each other…if I have to speak to my supervisor about something and if there's another supervisor there, then there is always other input. So there's not just you and your supervisor, sometimes you get more feedback because other people are listening in. Then it becomes a whole discussion so that's the nice part of it."* (P1)

Certain qualities relating to the clinical teachers also had a negative effect on the reflective learning process within the workplace. Abrupt, unapproachable, inattentive and absent supervisors were mentioned by a number of participants.

*"….when the supervisor is basically like short or blunt or abrupt with answers, not really giving constructive criticism and also the feeling of being rushed."* (P5)

*"….so I found it difficult to approach supervisors and ask for help because I always assumed I will get penalised or criticised because according to them I should know what I'm doing…"* (P2)

*"… honestly, some of the supervisors just come across as like they don't wanna be there."* (P2)

*"….and then sometimes supervisors during the clinical session, they just disappear….I think I spent like more than half my session just running around just looking for my supervisor to a point where the patient was getting upset with me."* (P4)

Participants felt that exposure to the concept of reflection and reflective practice in the junior years would contribute to their learning. Regular facilitation of reflection by clinical teachers was seen as beneficial in terms of understanding shortcomings and how to improve.

*"….if it [reflection questions] were asked in junior years, it would be a lot better. I would feel more confident answering."* (P1)

*"….in essence, if it [reflection after a clinic] was a general thing, I think it would be a good thing. I prefer more that way if it was a constant thing among all supervisors but because most supervisors just give you a mark for the session, you just become complacent with that, that you don't have to assess your own work"* (P4)

*"….it [reflection] actually helps me because then I actually get to learn where I'm going wrong and where I'm right. It does take a bit of time, but at the end of the day I feel that it is needed. "* (P5)

*"….I think it's a good series of questions to ask for me to think about what I did, not just going through the motions and getting the quotas or just getting to be done with the procedure, but that I would actually be able to know that I did something today, I did this well, I need to improve here and need to improve there, and apply it in different situations."* (P8)

Participants reported that there was an assumption that by the time they reached final year, they were expected to know what to do clinically. If a procedure was to be performed which was not encountered previously, only then would the interaction be more involved.

> *"….most of the time, say about 90% of the time it's an assumption that you should know what to do. Crown and bridge procedures which I have never done before they [supervisors] would say so what you gonna do? And then sometimes they will either tell me or wait for me to reply."* (P1)

> *"….because we are almost done, many of them [supervisors] say its fine, we don't really need to see anything…and then normally the supervisors don't ask me questions…."* (P3)

It was clear from the above exemplars that the clinical teacher played a vital role in workplace-based learning in terms of their "ways of being" (i.e. attentiveness, accessibility), the environment that they created and their perceived role in the final year Cons clinics. Learning appeared to be better facilitated when the relationship between the student and the clinical teacher was amenable to dialogue and the clinical teacher was approachable. The process of learning was negatively influenced when the clinical teacher was inattentive, inaccessible and unapproachable.

### 4.4.2 Sub-theme 2: Feedback and reflection

Feedback provided by clinical teachers could act as a method of facilitating reflective learning. Evident in this study cohort was that participants were clearly aware of the benefits of feedback if taken seriously and reflected on.

> *"….I don't mind feedback. I mean, we're here to learn, so I want to when I'm done here, feel confident and I don't want to feel stressed out when I'm all alone."* (P3)

> *"….I prefer the feedback….the way I see it, this is a teaching hospital so any feedback is only given to improve on what I'm currently doing….then I understand what I need to do to make something better. If I don't know where I'm going wrong, then how do I improve?"* (P4)

> *"….for me personally, I enjoy feedback because it alerts me on areas where I can improve or areas where I've done well so that I know that I'm on the right track."* (P7)

*"….if I don't receive the feedback that I feel is adequate for me in that session, I do tend to ask where I can improve."* (P8)

Participants experienced feedback to be supervisor-specific and mentioned that feedback was not always provided, apart from being awarded a mark.

*"….depends on the supervisor. Certain supervisors just give you a mark. They don't say anything about improvement or where you went wrong, where you went right. They don't really ask you how you felt about the session, they just give you a mark."* (P4)

*"….with some supervisors there is some sort of interaction….and with some supervisors there is no real interaction….they won't really speak about it…."* (P5)

*"….I'd say definitely supervisor dependent. I'd say it depends on the type of relationship the supervisor and student has."* (P7)

*"….it is dependent on the person [supervisor]. Most of the time no, but I do appreciate it when I receive feedback."* (P9)

*"….I do appreciate feedback, but it doesn't happen often."* (P10)

Feedback appeared to have been provided mainly when a problem was encountered.

*"….I had a patient where I would continuously anaesthetise, but she would still feel pain. The supervisor said okay, let her try anaesthetising different than we thought….so once the session was over we discussed that there was nothing wrong in the way I treated the patient, there was nothing wrong with my anaesthetic methods…. and then that's the type of feedback I would get. But usually if it's something not different then they would just give me a mark then it's done."* (P1)

Some participants expressed concern that feedback identifying areas of improvement should be done in a respectful manner, but at times, this was not the case.

*"….So I think rather give the bad feedback outside the cubicle, but I also think in a respectful way because there have been situations where you know, it's not that nice."* (P1)

*"….she said something like my work was nowhere near good enough and that she was worried about me and the quality of work I produce….and that hurt my feelings that she spoke to me like that."* (P2)

*"….obviously if it's a bad session, I don't want to be shouted at….So if I can get constructive feedback but in a nice way, I would accept it at any time."* (P3)

A number of participants reported that when they received feedback, they thought about or reflected on it and tried to use the feedback to improve on their learning, understanding and knowledge. Receiving feedback enhanced reflection for the participants.

*"….I think about it. I think about what my supervisor said, what I did and what I think about what I did, and then I put the two together. I use that to be better."* (P2)

*"….it forces you to think about what you've done….I understand the necessity of it."* (P6)

*"….I definitely do think about it [feedback]. Any guidance or critique we get we should absorb because we are on our own next year."* (P9)

*"….I would say that if I get feedback, I would use it. Like I would want to see what I did, now I want to compare my last work that I did previously and the work that I did after."* (P10)

Participants reported that they, at times, felt rushed in the clinical area and the feedback received most often consisted of a mark alone or comments that were too brief to be of value for reflection.

*"….so if you know that you need to work quickly then you need a fast supervisor that doesn't spend 20 minutes on one student…"* (P1)

*"….been very rushed….they [supervisors] just check the tooth and it's just okay you can start."* (P4)

*"….supervisor looks at what you've done and they'll say oh, that's good, or that's nice….but then you still get a 4 out of 5 for the session….if you think I did great, technically I should get a 5."* (P1)

*"….because most supervisors just give you a mark for the session you just become complacent with that. You don't have to assess your own work."* (P4)

*"….they would just give me a mark then it's done."* (P1)

Feedback on performance could be a useful vehicle for promoting reflection, however, the feedback would need to be exercised in a supportive and constructive manner on a consistent and regular basis. The general attitude (as inferred from the exemplars) of students to receiving feedback and reflection on it to improve on performance was positive.

### 4.5 Theme 4: Value of reflection and reflective practice in Dentistry

Theme 4 explored the participants' feelings and understandings about the importance of developing as reflective practitioners within the dental profession. Participants unanimously agreed that being reflective practitioners was vital to the profession.

*"….I have to know why I'm doing something and how I'm doing it, so I think it is important otherwise you have no direction….you gonna have made mistakes along the line and gonna have to understand why."* (P1)

*"….That's how you learn. I feel that's how you better yourself as a clinician."* (P2)

*"….I do think it's important because otherwise you are just doing things and not really thinking about how you can improve."* (P3)

*"….I think it's definitely good because at the end, you as a clinician would, like your skills, the part you were struggling with, will obviously be improved."* (P5)

*"….I think it is important especially because if you don't know where you are doing something wrong, you are going to keep on doing it wrong forever….you are gonna have to realise that…"* (P6)

*"….it would in terms of improving in areas where I am falling short."* (P7)

*"….I think the only way for you to grow as an individual generally is for you to learn from your mistakes, so for you to go back and see and talk about, or go through what you've experienced….will only improve what's to come ahead."* (P8)

*"….We are working with another human being….I just think if you just went into it and didn't ever think of everything that you did, obviously you are not going to improve on your work."* (P9)

*"….and also to learn from what you did previously."* (P10)

Participants reported that being reflective would assist them in being able to respond to challenges and cope with uncertainty, especially when they were alone in the workplace.

*"….especially in a sense when next year in community service when you actually don't have a supervisor there to check your work. Or even when you are in private practice and you are doing something you need to be able to do self-assessment and say, okay, this is what I'm doing wrong and this is what I'm doing right."* (P4)

*"….every time you get something different you are able to analyse and are able to develop the proper treatment plan."* (P10)

Interestingly, the exemplars all speak to the importance of being reflective in order to improve on clinical skills and learn from mistakes. What was lacking in the data, however, was any reference to patient wellbeing or any association of reflective practice to the development of patient care in a more holistic approach.

### 4.6 Conclusion

The findings provided insight into dental students' attitudes toward and understanding of reflection and reflective practice particularly within the Cons clinics. Of significance for me, through this data analysis, was firstly, the extent of the lack of guidance and support for reflective learning and/or clinical work; secondly, the inconsistency in provision of feedback and lastly, the procedure-focussed nature of the participants' comments- there were not many explicit comments on the value of reflection and reflective practice relating to the ultimate development and maintenance of quality care in practice.

## Chapter Five: Discussion and Conclusion

This chapter discusses the findings of the study as they relate to the literature on reflection and reflective practice in health professions education, particularly within the dental field. The limitations, contribution and recommendations will then be discussed.

### 5.1 Introduction

The study was designed to explore final year dental students' attitudes toward and understanding of reflection and reflective practice within the Cons dental clinics at UWC Dental Faculty. From the findings it became evident that the development of reflective learning was influenced by factors that either promoted or impeded the process within the clinical setting. The discussion will take place within each of the themes identified from the data analysis. The findings of the study will be compared to the most important aspects highlighted in the literature or as inferred from the data.

### 5.2 Theme 1: Understanding reflection and reflective practice

All participants of the study offered understandings of reflection and reflective practice, albeit naïve understandings. In terms of reflection, the results suggest that participants are able to connect with their thoughts and actions after an event with a view to evaluating them and ultimately establishing where to improve. The definitions, however, focussed solely on reflection-on-action in which thoughts and emotions are on what was done, what it was like, what was done well and what could have been done better. The definitions provided are in line with those described by Schon, 1983; Taylor, 2006 and Nguyen et al., 2014 in the Literature Review (2.2).

With regards to reflective practice, the definitions suggested a process of sense-making where experiences and actions were considered so that improvements could be realised. I was encouraged by the more explicit understanding provided by one of the participants (P6) where reflective practice was defined as being *"intentional about changing"* (Theme 1: Understanding reflection and reflective practice, 4.2) and implementation of these changes to subsequent situations. Reflective practice was therefore not merely viewed as a mental event. Similar definitions, relating to reflective practice being action-oriented and purposeful, are provided by numerous authors in the literature (Schon, 1983; Kuit, et al., 2001; Asadoorian, et al., 2011).

The findings suggest that participants have some understanding of reflection and reflective practice although there was room for more theory-informed engagement with the processes- participants' understandings seemed somewhat unsophisticated. The most likely reason for this is that participants had not been formally taught about any models or theories relating to

reflection as discussed in the following section. These findings are the starting point to answering one of the research questions of this study, namely, “What do final year dental students understand by reflection and reflective practice?”

## 5.3 Theme 2: Experiencing the reflective process

### 5.3.1 Lack of explicit teaching of reflection and reflective practice

It is clear from the findings that participants identified a lack of explicit teaching of reflection and reflective practice in the dental curriculum. Participants explained how, on occasion, they had heard about reflection from various lecturers, but were never taught how to go about the process.

Schon (1987) speaks about reflection-in-action in which reflection is part of thinking and happens intuitively- an individual has a sudden surprise experience that results in an innovative response where no known specific previous knowledge is implemented. Dewey (1933, p 4) however states that reflection is a particular way of thinking and not merely “an uncontrolled coursing of ideas through our heads”. Reflection involves an awareness (deliberate noticing, understanding and meaning-making) followed by critical analysis (what is being done and why it is being done) leading to new knowledge and learning.

Taylor (2006) and Mann, et al. (2009) have argued that reflection and reflective practice are not spontaneous activities, but are teachable and require guidance and time, all within a supportive environment. Other authors refer to reflection as being a skill which would require it being taught and practised for development of mastery (Driessen, et al., 2005; Aronson, et al., 2012).

A lack of prior knowledge of the process, having to expose their thoughts in a space that has not been established as particularly safe, and unpacking and explaining their clinical practices can leave participants feeling insecure and vulnerable. The consequence might be abandonment of attempts to learn from the experience resulting in the practice remaining underutilised in Dentistry.

Albanese (2006) recommends that reflection and reflective practice need to be incorporated into the curriculum as the process cannot be expected to happen naturally. The purpose of reflection needs to be made explicit for this important skill to be valued. Programme coordinators for the dentistry programme first need to validate reflective practice as a learning

strategy, then consider how explicit teaching of reflection and reflective practice can be added across the curriculum.

### 5.3.2 Requirement of being expected to reflect

The findings of this study showed that participants have experienced some clinical teachers expecting them to reflect on their clinical experiences with a resultant uneasiness felt by the majority of participants. These findings are similar to the findings in a systematic review by Uygura, et al. (2019) who reported that many educators were using reflection without teaching students how to reflect. The expectation of reflection by clinical teachers could be based on the assumption by these teachers that participants have been taught and understand the value of reflection as it relates to learning and development. An additional assumption based on the findings is that the clinical teachers who are encouraging reflective activities themselves understand the concept and significance within the dental profession. However, clinical teachers' perspectives were not explored in this study.

### 5.3.3 Challenges relating to the process of reflection

It is not surprising that the process of reflection was referred to as being uncomfortable or challenging. An explanation for the discomfort felt by participants could be that reflection forces introspection which requires one to be honest about one's behaviour. A recognition of not only successes, but areas of shortcomings may result in a discovery of flaws in what was previously not identified as problematic. This could be the source of the discomfort as it is generally harder to acknowledge deficiencies than achievements. This is consistent with other studies that found that reflecting on situations that lead to disruption in firmly held beliefs result in unsettling feelings. This uneasiness will potentially lead to a change in behaviour (Hyde, et al., 2018; Lucas, et al., 2017). A number of authors have also reported on the challenges of teaching a generation who are not comfortable searching within themselves for solutions and who find learning techniques more important than attempting to learn from the experience (Sandars & Homer, 2008; Eckleberry-Hunt & Tucciarone, 2011).

Further findings from the data, which relates to the challenges experienced with reflection in the clinical setting, is the repetitive nature of certain procedures which becomes almost automatic with very little thought devoted to the procedure. Tsang (2012) reported that when experiences are perceived to be routine, reflection is hampered and practices become mechanical.

## 5.4 Theme 3: Workplace-based teaching, learning and development of reflection and reflective practice

### 5.4.1 Interaction between participants and clinical teachers in the clinical context

In this study, a number of participants reported that the facilitation of reflection or a simple dialogue before, during and after a clinical experience was often supervisor-specific. An explanation for this could possibly be that these clinical teachers who facilitate reflection acknowledge and are aware of the value and benefits of reflective practice as a learning strategy. This is in line with the work done by Mann, et al. (2009) who suggest that the engagement helps to promote learning by assisting students make meaning of clinical encounters.

Participants reported that when discussions were initiated, it would often be as a result of a problem that was encountered. Hyde, et al. (2018) and Lucas, et al. (2017) argue that negative experiences often prompt reflection and discussion because it is easier to think about what can be done differently to result in a more favourable outcome.

A few participants mentioned slightly more discussion and interaction in the junior years compared to final year. However, Teply, et al. (2016) have argued that every clinical encounter should be viewed as a holistic learning opportunity and not only a procedural learning opportunity. The many diverse scenarios that dentists will encounter do not lend themselves to straightforward solutions, so discussions within the clinical learning environment should be abundant and frequent. Westberg (2001) suggests that students need to practise reflecting on and learning from experiences throughout their curriculum for them to become reflective. These sentiments are echoed by Tsang (2012) who concluded that the development of reflection was dependent on exposure to numerous clinical experiences with varying degrees of difficulty over time. Programme developers and clinical coordinators should consider this extremely important finding when curriculum review and restructuring is embarked upon.

As previously discussed in the Literature review (2.4), Trede & Smith (2012) highlight the need for clinical teachers to be facilitators of learning rather than providers of information. Expanding on this, the work in the clinical setting is presented and the clinical teacher together with the participant think about the encounter, what will be done, and how it will be handled (reflection-for-action) (Thompson & Pascal 2012). When the encounter is completed, an interaction between both parties should include a discussion on the strengths and areas of improvement for subsequent encounters (reflection-on-action). In light of this, it is concerning that the findings suggest that there is a focus on provision of information by the clinical teacher (as

reported by the students) rather than the facilitation of reflective learning. The findings of this study suggest that participants and clinical teachers do not fully recognise the value and benefits of reflection and reflective learning. A further suggestion is that clinical teachers are not skilled at facilitating reflection which has been found to be the case elsewhere (Branch & Paranjape, 2002; Muir, 2010; Sukhato, et al., 2016). The findings of this study demonstrate the need for greater emphasis on the importance of reflective learning within the dental programme.

Evident from the data is the impact that clinical teachers have on participants' learning in the workplace. Their influence either promotes or impedes learning. There is abundant literature on the role that the clinical teacher plays in providing a supportive environment to enable reflection (Sandars, 2009; Trede & Smith, 2012; Academy of Medical Royal Colleges, 2017). Open communication, mutual respect, supportive clinical supervision, accessible, approachable and engaged are qualities listed that foster positive working relationships (Academy of Medical Royal Colleges, 2017). Approachable, willing to teach, enthusiastic, engaged and accessible are some of the qualities reported in this study that positively influenced interaction. This resulted in putting patients at ease. Of concern to me, when looking at the data, are the factors that impede learning. These include an assumption of being penalised or criticised, inability to disagree with the clinical teacher because it feels uncomfortable, and a disengaged or inaccessible clinical teacher. These findings strongly suggest that clinical teachers should be aware of the qualities they possess, the relationship they share with the students and how this influences student learning.

The findings might be a reflection of the nature of the dental programme (it being procedure- and assessment-driven) and the limiting nature of the clinical environment (for example: time constraints, patient anxiety, human resource constraints). The study by Tsang & Walsh (2010) reports on the focus of clinical teaching in Dentistry being largely technique and procedure-driven; the approach does not optimise learning (1.1).

### 5.4.2 Feedback and reflection

The evidence suggests that participants' attitudes toward feedback is generally positive and they understand the benefits of feedback in terms of contributing to improvements on existing performance. This aligns with the study done by Ahmed (2018) where feedback was found to reinforce best practice through clarifying goals and correcting errors. A quote by one of the participants clearly illustrates and reinforces this:

> *"….I can say that maybe this is fine at my level, but the supervisor level, someone that has practised dentistry more than me, I think he or she must have something to say so that I can take that to improve or develop myself as a clinician."* (P10)

The above exemplar is aligned with Vygotsky's concept of learning in the zone of proximal development which is described as the difference between what the student can achieve on his/her own and the level achievable with the guidance and help of others (the clinical teacher in this instance) with the appropriate knowledge and skills. The student is guided from a level of potential development to the level of actual development which is where the student is able to practise independently (Vygotsky, 1978). Supportive activities by the clinical teacher, namely feedback and assistance, in a reassuring learning environment will help guide the student through the zone of proximal development.

Highlighted in the data is the infrequency of feedback and the experience of feedback being supervisor-specific. Relating to infrequency of feedback, I postulate that the reasons for this could be the nature of the clinical environment being productivity-driven and the dental programme being technique-focussed. Resource and time constraints also limit the opportunity for providing feedback (Price, et al., 2010). This presents a missed opportunity as the workplace is the perfect environment to encourage and develop reflective learning as it provides students with authentic experiences, but currently, especially in the dental clinical curriculum, the focus appears to be on productivity, efficiency and summative assessment. Receiving feedback consistently will allow one to reflect on the feedback for continuous improvement. The infrequency of feedback could well be one of the reasons why participants do not often engage in reflection and this aligns with what Quinton & Smallbone (2010) have reported with regard to supportive, good quality feedback being used as a vehicle to promote reflection.

Clinical teachers are responsible for creating the environment that supports and encourages feedback and reflection. The manner in which feedback is delivered by clinical teachers was also reported by participants to be what motivated them to consider taking the feedback on board. This is supported by the work done by Mann, et al. (2009) who propose that operationalising feedback and reflection in the clinical setting are based on the relationship and interaction between the clinical teacher and the student. There needs to exist an honest, respectful, supportive environment where students feel comfortable to discuss all aspects of the clinical encounter, namely the successes and areas requiring improvement. These views are supported by Academy of Medical Royal Colleges (2017).

In light of these findings, clinical teachers should be aware of their personal attributes as educators and clinicians, the relationship they share with the students and the impact that these factors have on student learning and development.

### 5.5 Theme 4: Value of reflection and reflective practice in Dentistry

Being reflective assists in making sense of new information and identifying how this new knowledge integrates into the existing understanding and practice. This helps to better understand which areas require improvement.

The findings suggest that participants are aware of the value of being reflective practitioners relating to a better understanding of which areas require improvement. Evident to me is that most participants view being reflective mainly in light of improving on shortcomings, however, in the literature, being reflective allows one to identify areas of good performance as well as areas requiring improvement (Academy of Medical Royal Colleges, 2017), increases self-awareness, promotes learning, enables self-empowerment and eventual professional competence (Mann et al., 2009; Asadoorian et al., 2011).

Throughout the entire data set there is no explicit mention of the value of reflection and reflective practice in terms of improved patient care. The focus tends to be on improvement of techniques and procedures, unless the implicit consequence is improved patient care. This observation is in line with suggestions made by Tsang & Walsh (2010) relating to the approach to clinical teaching and learning in Dentistry as a whole being technique-focussed and Powell (1989) who suggested that students may prefer to learn techniques because they view techniques as more important.

### 5.6 Conclusion

In health professions education, calls for developing reflective practitioners have progressively been voiced. There has been a growing awareness in the health professions that solely teaching clinical knowledge and skills is not sufficient to facilitate development of competent, professional, human-centred and socially responsible healthcare practitioners (Kumagai & Naidu, 2015). Becoming a healthcare professional requires an understanding that extends beyond mere scientific knowledge. Patient encounters are key to the provision of learning opportunities for students and their development as healthcare providers (Barr, et al., 2015).

Following graduation, dental graduates become autonomous providers of patient care without faculty being available to provide assessment and guidance. Being taught and guided to evaluate skills and behaviour through reflection and self-assessment prepares students to

successfully navigate a dynamic, ever-changing work environment. Dentists who are unable to self-assess could be at risk of providing less than optimal care for their patients. It is for this main reason that it is crucial for dental curricula to explicitly incorporate reflection and reflective practice as well as feedback throughout the programme. Developing reflective learning and practice will potentially enhance a deeper approach to student learning, improve students' clinical performance, and ultimately improve oral health care delivery for patients, all of which are vital for fulfilling the core values of the institution.

The study set out to explore final year dental students' attitudes toward and understanding of reflection and reflective practice. What emerged from the data are participants' naïve understandings of the concepts and value of the process. There was limited evidence of the contribution of reflection and reflective practice to patient-centred care, but overt evidence of a contribution to the improvement of techniques. These valuable insights could enable faculty to have a better understanding of the strengths and areas of improvement required on the current clinical platform within the Cons clinics at UWC, Faculty of Dentistry so that the educational goals of the institution can be enhanced. These goals include developing health professionals with a human-centred professional identity who will maintain and improve the oral health status and overall patient well-being in an ever-changing clinical environment.

### 5.7 Limitations of the study

Due to the small sample size and small-scale nature of the study, the results cannot be broadly generalised. The fact that only final year dental students were chosen and no other year group could also be a limitation. A further limitation of the study is the question of the power relationship between myself and the participants. The possibility that students may have been influenced by my position as their lecturer may have existed even though I generally have an amicable relationship with all the students. The potential of the Hawthorne Effect needs to be acknowledged as a limitation where participants' responses could have been influenced by their awareness of being part of a research study (Diaper, 1990). A further limitation is the study only explored students' attitudes and understandings and did not include those of the clinical teachers.

### 5.8 Contributions

The research has highlighted the lack of explicit teaching of reflection and reflective practice as well as the lack of feedback on performance which is reported in the literature to assist in professional development of students when combined with reflection. This research will potentially be adding to the existing knowledge on developing reflection and reflective practice in health professions education, more especially in Dentistry where such studies within the

South African context are lacking. The ultimate contribution of the research is firstly, to better inform educational activities so that the clinical environment becomes a meaningful learning platform where integration of theory and practice is enabled. Secondly, assist in student learning by facilitating critical thinking, clinical reasoning, evidence-based decision-making and acquisition of enhanced skills. This will potentially reduce the risk of non-conscious practice that may lead to compromised patient care. Lastly, future curriculum decisions and staff development activities can be informed by clinical teachers' knowledge of factors that enable and constrain reflection and reflective practice.

## 5.9 Recommendations

Students need to be taught about reflection and reflective practice and given the opportunity to practise and receive feedback throughout their programme so that they are effectively and competently able to provide optimal patient care. Dental programme developers need to consider and incorporate this vital educational tool into the curriculum during the curriculum renewal process. The potential of reflection may not be fully realised without the assistance and facilitation of the clinical teacher. Clinical teachers should therefore be supported in their role through staff development initiatives with respect to improving reflective teaching and feedback practices rather than simply providing information on the clinical platform.

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**Addendum A** (HREC Ethics approval letter)

UNIVERSITEIT STELLENBOSCH UNIVERSITY

**Approval Notice**

**New Application**

03/05/2019

**Project ID** : 9240

**HREC Reference #**: S19/02/041

**Title**: Exploring final year dental students' attitudes toward and understanding of reflection and reflective practice in the Conservative Dentistry Clinics at a South African dental school

Dear Dr Colleen Cloete,

The **Response to Modifications** received on 29/03/2019 13:01 was reviewed by members of **Health Research Ethics Committee 2 (HREC2)** via **expedited** review procedures on 03/05/2019 and was approved.

Please note the following information about your approved research protocol:

**Protocol Approval Period: This project has approval for 12 months from the date of this letter.**

Please remember to use your **Project ID [9240]** on any documents or correspondence with the HREC concerning your research protocol.

Please note that the HREC has the prerogative and authority to ask further questions, seek additional information, require further modifications, or monitor the conduct of your research and the consent process.

**After Ethical Review**

Please note you can submit your progress report through the online ethics application process, available at: Links Application Form Direct Link and the application should be submitted to the HREC before the year has expired. Please see *Forms and Instructions* on our HREC website (www.sun.ac.za/healthresearchethics) for guidance on how to submit a progress report.

The HREC will then consider the continuation of the project for a further year (if necessary). Annually a number of projects may be selected randomly for an external audit.

**Provincial and City of Cape Town Approval**

Please note that for research at a primary or secondary healthcare facility, permission must still be obtained from the relevant authorities (Western Cape Department of Health and/or City Health) to conduct the research as stated in the protocol. Please consult the Western Cape Government website for access to the online Health Research Approval Process, see: https://www.westerncape.gov.za/general-publication/health-research-approval-process. Research that will be conducted at any tertiary academic institution requires approval from the relevant hospital manager. Ethics approval is required BEFORE approval can be obtained from these health authorities.

We wish you the best as you conduct your research.

For standard HREC forms and instructions, please visit: Forms and Instructions on our HREC website https://applyethics.sun.ac.za/ProjectView/Index/9240

If you have any questions or need further assistance, please contact the HREC office at 021 938 9677.

Yours sincerely,

Mr. Francis Masiye,

HREC Coordinator,

Health Research Ethics Committee 2 (HREC2).

*National Health Research Ethics Council (NHREC) Registration Number:*

Page 1 of 2

**Addendum B** (UWC Ethics approval letter)

UNIVERSITY of the WESTERN CAPE

DEPUTY REGISTRAR
Academic Administration
Administration Building, 1st Floor
ashaikjee@uwc.ac.za, nschoeman@uwc.ac.za
021 959 2110

16 May 2019

**RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT THE UNIVERSITY OF THE WESTERN CAPE**

| | | |
|---|---|---|
| **Name of Researcher** | : | Colleen Carol Anne Cloete |
| **Research Topic** | : | Exploring final year dental students' attitudes toward and understanding of reflection and reflective practice in the Conservative Dentistry Clinics at a South African dental school South African university |
| **Date of issue** | : | 16/05/2019 |
| **Reference number** | : | UWCRP160519CCAC |

This serves as acknowledgement that you have obtained and presented the necessary ethical clearance and your institutional permission required to proceed with the above referenced project.

Approval is granted for you to conduct research at the University of the Western Cape for the period **16 May 2019** to **02 May 2020** (or as determined by the validity of your ethics approval). You are required to engage this office in advance if there is a need to continue with research outside of the stipulated period. The manner in which you conduct your research must be guided by the conditions set out in the annexed agreement: *Conditions to guide research conducted at the University of the Western Cape.*

The University of the Western Cape promotes the generation of new knowledge and supports new research. It also has a responsibility to be sensitive to the rights of the students and staff on campus. This office will require of you to respect the rights of students and staff who do not wish to participate in interviews and/or surveys.

It is also incumbent on you to first furnish this office with a copy of the proposed publication should you wish to reference the University's name, spaces, identity, etc. prior to public dissemination.

Please be at liberty to contact this office should you require any assistance to conduct your research or specifically require access to either staff or student contact information.

Yours sincerely

DR AHMED SHAIKJEE
DEPUTY REGISTRAR
OFFICE OF THE REGISTRAR

UWC
UNIVERSITY OF THE WESTERN CAPE
PRIVATE BAG X17, BELLVILLE
STUDENT ADMINISTRATION
16 MAY 2019
This document contains a qualified electronic signature and date stamp. To verify this document contact the University of the Western Cape at researchperm@uwc.ac.za

**UWCRP160519CCAC**

**Addendum C** (Student information sheet & consent form)

| **TITLE OF RESEARCH PROJECT:** | |
|---|---|
| Exploring final year dental students' attitudes toward and understanding of reflection and reflective practice in the Conservative Dentistry clinics at a South African dental school | |
| **DETAILS OF PRINCIPAL INVESTIGATOR (PI):** | |
| **Title, first name, surname:**<br>Dr Colleen Carol Cloete | **Ethics reference number:**<br>S19/02/041 |
| **Full postal address:**<br><br>Oral Health Centre, UWC Dental Faculty, Room 2107, C-Floor, Tygerberg Campus, Francie Van Zijl Drive, Tygerberg, 7505 | **PI Contact number:**<br><br>021-9373092 (w)<br>0835742728 (c) |

I would like to invite you to take part in a research project. Please take some time to read the information presented here, which will explain the details of this project. Please ask the researcher any questions about any part of this project that you do not fully understand. It is very important that you are completely satisfied that you clearly understand what this research entails and how you could be involved. Also, your participation is **entirely voluntary** and you are free to decline to participate at any stage of the research study. In other words, you may choose to take part, or you may choose not to take part, it will not affect you negatively in any way whatsoever and as the year coordinator and researcher involved, I guarantee that there will be no penalty or reward associated, whatever you choose. You are also free to withdraw from the study at any point, even if you do agree to take part initially. Any data generated before your withdrawal from the study will be destroyed (deleted) and not be used in any way going forward.

This study has been approved by the Health Research Ethics Committee at Stellenbosch University. The study will be conducted according to the ethical guidelines and principles of the international Declaration of Helsinki, the South African Guidelines for Good Clinical Practice (2006), the Medical Research Council (MRC) Ethical Guidelines for Research (2002), and the Department of Health Ethics in Health Research: Principles, Processes and Studies (2015).

**What is this research study all about?**

The study will be conducted at the Faculty of Dentistry, University of the Western Cape. The purpose of the study is to explore students' attitudes towards reflection and reflective practice and what students understand about practicing reflection in the clinical environment. The process involves a general invitation to final year dental students to participate. Participants will be selected for individual face-to-face interviews at a mutually convenient time. The duration of the interview should be 30-45 minutes and will be audiotaped. The interview will be conducted in a quiet, private space free from disturbances.

**Why do we invite you to participate?**

You are a source of valuable information that the researcher needs in order to improve educational and clinical activities in the Conservative Dentistry clinics.

**What will your responsibilities be?**

You will be required to share your understanding and experience of reflection and reflective practice in the Conservative Dentistry clinics.

**Will you benefit from taking part in this research?**

By understanding the benefits of reflection and reflective practice, the hope is to develop dental students into reflective practitioners who have improved self-awareness, are critical thinkers with an ability to clinically reason, so empowering students to learn from experiences and ultimately provide optimal patient care.

**Are there any risks involved in your taking part in this research?**

There are no risks involved in your taking part in this research.

**Who will have access to your information?**

The researcher will endeavour to protect participant privacy and confidentiality. All participant contributions (audio-recordings, verbatim transcripts and notes) will be stored in a safe and regulated environment with controlled access for a period of five years. Anonymity will be carefully maintained and your identity will be protected at all times. A participant number will be allocated where direct quotations containing sensitive details are used.

**Will you be paid to take part in this study and are there any costs involved?**

Participants will receive no monetary compensation for their participation, however, refreshments will be offered as a gesture of appreciation. You will not incur any costs if you do take part.

**Is there anything else that you should know or do?**

Data from this research study will be kept for a period of five years with confidentiality maintained.

Findings will be presented in a manner maintaining participant confidentiality. Once the final research assignment has been submitted and assessed, a link will be circulated to the participants. Dissemination to the institute will be in the form of a journal club presentation. It is the intention of the researcher to publish the results of the study in an accredited Health Professions Education Journal. Participants' contribution to the research will be used to improve educational practices at the dental faculty, ultimately leading to the best available patient care.

If you are willing to participate in this study, please sign the attached **Declaration by participant** and hand it to the principal researcher. You will receive a copy of this information and consent form for you to keep safe.

**Declaration by participant**

By signing below, I …….…….. agree to take part in a research study entitled (**Exploring final year dental students' attitudes toward and understanding of reflection and reflective practice in the Conservative Dentistry clinics at a South African dental school**).

I declare that:

- I have read this information and consent form, or it was read to me, and it is written in a language in which I am fluent and with which I am comfortable.
- I have had a chance to ask questions and I am satisfied that all my questions have been answered.
- I understand that taking part in this study is **voluntary,** and I have not been pressurised to take part.
- I may choose to leave the study at any time and nothing bad will come of it – I will not be penalised or prejudiced in any way.

Signed at (*place*) .....…….. on (*date*) ……..…….. 2019.

..... .....

**Signature of participant** **Signature of witness**

**Declaration by investigator**

I *(name)* Dr Colleen Carol Cloete declare that:

- I explained the information in this document in a simple and clear manner to ……..
- I encouraged him/her to ask questions and took enough time to answer them.
- I am satisfied that he/she completely understands all aspects of the research, as discussed above.

Signed at (*place*) .....…….. on (*date*) ……..…….. 2019

..... .....

**Signature of investigator** **Signature of witness**

**Addendum D** (Interview schedule)

- In your own words, please explain what reflection means to you?
- In your own words, please explain what reflective practice means to you?
- Have you been taught about reflection and reflective practice?
- How did you experience your interaction with the clinical teacher before you started treating the patient?
- Please provide me with an example of what you were thinking and feeling as you are treating the patient?
- Describe your interaction with the clinical teacher during the Cons session while the patient is being treated
- Describe what happens after Cons clinical session when you are having your paperwork signed off
- Tell me about how you experience being in the Cons clinics
- Tell me how you experience feedback in the Cons clinics
- What do you do once you have received the feedback?
- Tell me about the clinical environment. What factors assist in making the Cons session productive and enjoyable? What factors make the session less enjoyable?
- Have you experienced being asked by the clinical teacher to describe how you felt during the session, what you have learnt, and how you can improve? How did this make you feel?

**Addendum E** (Concept maps per theme)

The themes and sub-themes are represented in the concept maps below as a way of illustrating my interpretation of the qualitative data.

**Figure 1: Theme 1- Understanding reflection and reflective practice**

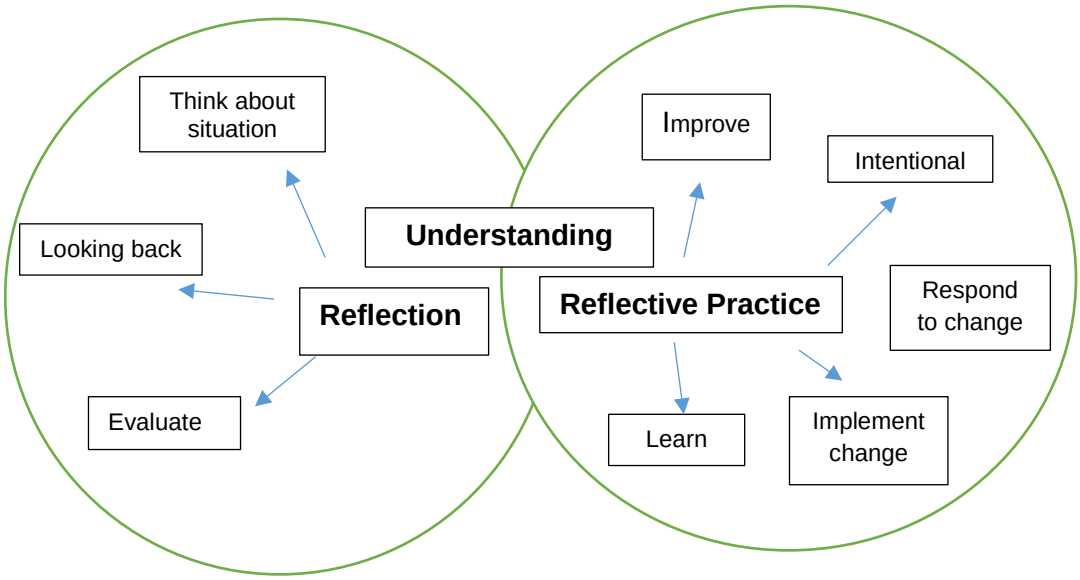


**Figure 2: Theme 2- Experiencing the reflective process**

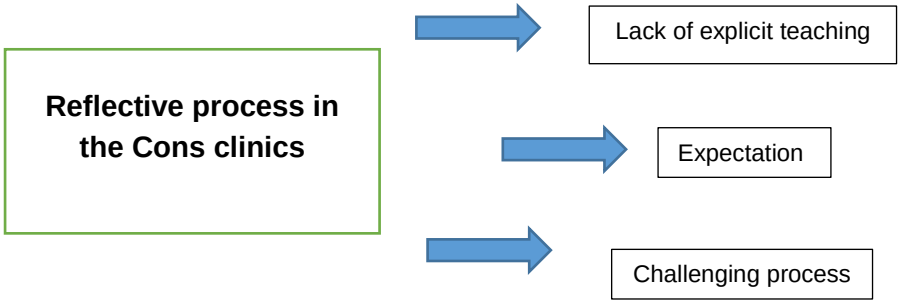

**Figure 3: Theme 3- Workplace-based teaching, learning and development of reflection and reflective practice**

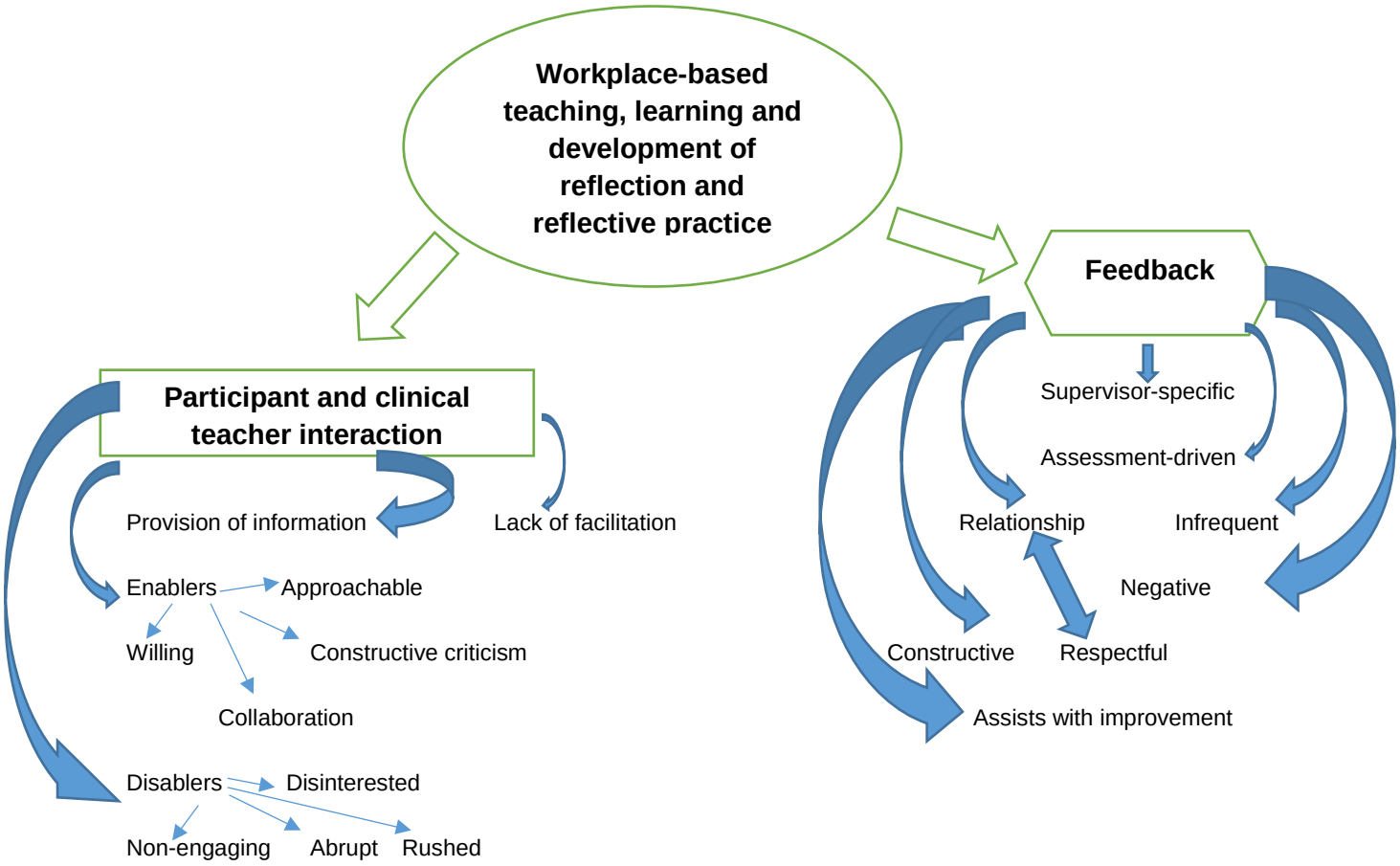


**Figure 4: Theme 4- Value of reflection and reflective practice in Dentistry**